

NOMENCLATORIAL CHANGES, LECTOTYPIFICATION, AND COMMENTS IN *ARONIA MEDIKUS* (ROSACEAE)

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ABSTRACT

Aronia arbutifolia (L.) Elliott var. *glabra* Elliott is reduced to *forma*. A lectotype is designated for *A. melanocarpa* (Michaux) Elliott. *A. prunifolia* (Marshall) Rehder is formally designated a hybrid and the taxonomic consequence of this action is discussed.

In correcting the nomenclature of *Aronia arbutifolia* (L.) Elliott var. *glabra* Elliott, this author (1983) followed the prevailing practice of not recognizing this variety taxonomically. Since then, I have come to believe that the occasional short-stemmed Red Chokeberries with promptly glabrous leaves, peduncles, hypanthia, inner calyx, and young twigs, which occur in sand near the Atlantic coast from southern New Jersey to north Florida, are too manifestly different from the usual copiously pubescent Red Chokeberry to be dismissed as just another variant in a highly plastic species. Present descriptions of *A. arbutifolia* (L.) Elliott are rendered clumsy by obligatory tag-phrases to account for glabrous populations in an essentially pubescent species. Precise keys are difficult to construct. Failure to recognize the glabrous Red Chokeberries as an entity abets a continuing proclivity for some to confuse the glabrous northern Black Chokeberry, *A. melanocarpa* (Michaux) Elliott, with glabrous Red Chokeberries, resulting in persisting reporting of Black Chokeberries outside their natural range.

It is difficult to maintain the glabrous Red Chokeberries as a variety due to a pattern of continuous intergradation with the pubescent majority of plants. Still one is left with a residuum of promptly glabrous plants which are not servile to the majority of pubescent phenotypes. Intermediates may be clinal; they may represent introgression between the phenotypes, or both. No one really knows at this time. Such intermediates, when not in fruit, could be confused with *A. prunifolia* (Marshall) Rehder.

A suggested resolution to this problem is to consider the promptly glabrous plants as a *forma*:

ARONIA ARBUTIFOLIA (L.) Elliott *forma glabra* (Elliott) Uttal comb. et
stat. nov.

Aronia arbutifolia var. *glabra* Elliott, Sketch Bot. S. Carolina. I: 557. 1821. Including *Pyrus arbutifolia* var. *glabra* Cronquist, Castanea 14: 101-102. 1949, a superfluous name requiring recombination if maintained.

This *forma* is rare northward and most frequent from coastal North Carolina to Georgia.

Cronquist (1949) associates an inconsistent wand-like habit with this entity. I find the wand-like habit occasional in both glabrous and pubescent plants, growing in coastal and subcoastal open sands and the gravel of railroad banks. It seems to be purely an edaphic phase, the short stiff stems emanating from aggressive pioneer rhizomes. Branches of the virgate stems are aborted and spur-like. It is not known if virgate clones are independent or are adventitious from normal well-branched core colonies.

There should be no problem distinguishing non-fruiting *A. arbutifolia* f. *glabra* from *A. melanocarpa*:

Leaves dull green, turning red in fall, veinlets obscure. Herbarium material: some leaves anthocyanic. Aggressively rhizomatose, in sand and gravel, often virgate; southeastern United States coastal region.

..... *A. arbutifolia* f. *glabra*
Leaves bright green, never turning red in fall, veinlets conspicuous. Herbarium material: leaves always green. Cespitose, in rocky or damp upland soils, never virgate; not south of north Georgia mountains. *A. melanocarpa*

Hardin (1973) made a strong case for the hybrid origin of *A. prunifolia* (*A. arbutifolia* X *melanocarpa*), both ancient and current, and laid to rest earlier objections to this hypothesis. He did not choose to formalize this hybrid but rather to formally recognize only the parental species. On the grounds that fruit color is the only reliable basis for separating chokeberry species, he included *A. prunifolia* with *A. melanocarpa* for purposes of identification. This union is unnatural and can not be sustained. Before discussing the reasons, it is necessary to designate a lectotype for *A. melanocarpa*, there being three sheets in the Michaux herbarium bearing elements of this species:

ARONIA MELANOCARPA (Michaux) Elliott, Sketch Bot. S. Carolina I: 556. 1821.

Pyrus melanocarpa (Michaux) Willdenow, Enum. Pl. Hort. Berol. 525 (1809).

Sorbus melanocarpa (Michaux) Heynhold, Nom. Bot. Hort: 773 (1840).

Mespilus arbutifolia var. *melanocarpa* Michaux, Fl. bor.-amer. 592. 1803. Basionym. LECTOTYPE (here designated): "*Mespilus arbutifolia* fructu nigro, Tres Hautes Montagnes de la Carolina Septentrionale et Canada; aussi Connecticut, Boston etc." Auxillary label: "*Mespilus arbutifolia* Amelanchier d'Améri. fruit noir. Canada Mistassin et Quebec." (LECTOTYPE: P, Herb. de l'Amérique Septentrionale d' André Michaux, IDC microfiche 6211. 65:III.6! Annotated "*Aronia melanocarpa*" by hand believed to be that of A. Gray).

Aronia prunifolia introgresses continuously with its presumed parents, *A. arbutifolia* and *A. melanocarpa*, and has been recognized as a hybrid (usually

with objection) a variety of either of the other two species, or, most usually, as a distinct species. Its leaves almost always have some pubescence on the under surface, if only restricted to the lower midrib and petiole. Early leaves are almost always pubescent. Peduncles may be partly pubescent or glabrous. The hypanthium is usually glabrous. Certain plants have very large, brilliantly lustrous purple-black pomes and lustrous pinkish twigs and red bud scales. Sterile shoots are sometimes very tall with exceptionally large leaves. Such plants may be F¹'s or close. The possibility of amphiploidy must be considered.

Aronia prunifolia, if a hybrid, according to Hardin (l.c.), maintains its phenotype by agamospermy and allogamy and has spread beyond parental sympatry. It is thus a viable entity. Even putative nothomorphs and backcrosses retain some pubescence. To include *A. prunifolia* with *A. melanocarpa* is discordant with the protologues of both entities.

If truly a hybrid, the inclusion of *A. prunifolia* with one of its parents is unnatural. The International Code (Art. H. 10) prescribes the use of the hybrid formula or name for all descendents, even to backcrosses.

Following the strong case for hybridity established by Hardin (l.c.), the author hereby formalizes it: *Aronia* x *prunifolia* (Marshall) Rehder (pro sp.) (*A. arbutifolia* x *melanocarpa*).

Though the boundaries between the parent species are obscured by introgression, in core localities they maintain their integrity and can usually be readily distinguished even when not fruiting. Candid intermediate plants are no problem; species descriptions often center on these. Marginal introgressants can be designated *A. x prunifolia* "complex".

While two entities of black vs. red Chokeberries is artificially facile and the designation of *A. prunifolia* as a hybrid results in a return to the necessity of designating enigmatic specimens, this is the philosophic nature of things for plants defy compartmentalization and the problem of dealing with introgressants is common enough.

The problems in *Aronia* remain in a primitive state of comprehension. From the standpoint of classical taxonomy, they will continue to defy finite resolution until better specimens are provided. Most extant specimens are insufficient. A collector should do his utmost to obtain both flowering and fruiting samples from the same plant. Root sampling is important. If it is impossible to obtain roots, describe them. Report if the specimen is from a vegetative clone or is caespitose. Root differences between the species is imperfectly known despite the statement in Radford *et al.* (1968) that red and purple chokeberries are rhizomatose while black ones are caespitose.

The following analysis of *Aronia* taxa is offered:

1. *A. arbutifolia* f. *arbutifolia*—Fruit dull to lustrous red, persisting into winter, even into spring. Colonial by rhizomes. Leaves dull green, densely tomentose on undersurface, the veinlets obscured, turning red in fall; on herbarium specimens, often anthocyanic. Peduncles, young twigs, hypanthia,

inner calyx, and, often, base of or entire pome pubescent. Stems often wand-like in coastal areas. Shrub, 1–3 m tall.

1a. *forma glabra*—leaves, peduncles, young twigs, hypanthia, inner calyx promptly glabrous. Usually less than 1 m tall.

2. *A. melanocarpa*—Fruit dull to barely lustrous black, promptly dropping when ripe. Reported to be nonrhizomatose. Leaves bright green, glabrous throughout or rarely with a few isolated hairs on undersurface, drying green in fall; on herbarium specimens, veinlets conspicuous. Peduncles, young twigs, hypanthia, inner calyx and fruit glabrous. Stems amply branched, never wand-like, 1–2 m tall, rarely to 3 m.

3. *A. x prunifolia*—Fruit purple-black to black, sometimes large and brilliantly lustrous, as are sometimes stems and bud-scales, but as often small and dull, persisting into winter or dropping early. Leaves usually lightly pubescent on undersurface to nearly glabrous when mature retaining some hairs on lower part of midrib and petiole, ranging from dull to bright green, turning red in fall or drying green, occasionally enormous (to 9 cm). Inner calyx villous. Peduncles usually pubescent at base to entirely glabrescent. Young twigs slightly pubescent to glabrous. Shrub, usually 1–2 m, vigorous sterile shoots to 3 m.

Specimens used in this study are in VPI. Field observations were made in Virginia, North Carolina, and Alabama.

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